

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended) A microfabricated biopsy and genetic analysis instrument for biopsy and analysis of tissue with minimal handling of the tissue, consisting of:

~~a biopsy region having~~ provided by

a cutter ~~section~~ having a tapered opening with a sharp edge for cutting the tissue,

a specimen chamber connected directly to said biopsy region and located below said cutter ~~section~~, said specimen chamber positioned to directly receive the tissue cut by said cutter, and

a specimen treatment ~~section~~ and analysis chamber abutting and connected directly to said specimen chamber and located adjacent said specimen chamber, and

~~a genetic region having~~

a PCR reaction chamber ~~section~~ directly abutting and connected directly to said specimen treatment ~~section~~ and analysis chamber, said PCR reaction chamber ~~section being integral with said specimen treatment section or abutting said specimen treatment section~~ constructed to receive the tissue from said specimen treatment and analysis chamber.

Claim 2. (Currently Amended) The instrument of Claim 1, wherein said sharp edge of said cutter ~~section includes a member having an opening therein having~~ a smooth cutting edge with atomic sharpness capable of cutting very thin specimens of the tissue.

Claim 3. (Currently Amended) The instrument of Claim 2, wherein said ~~member~~ cutter is constructed of silicon.

Claim 4. (Currently Amended) The instrument of Claim 2, wherein ~~said opening has a tapered configuration located adjacent~~ said specimen and analysis chamber and said PCR reaction chamber are constructed of glass.

Claim 5. (Currently Amended) The instrument of Claim 1, wherein said specimen treatment and analysis chamber and said PCR reaction chamber are constructed of glass and said cutter is constructed of ~~section includes a silicon member and another member and wherein said specimen treatment and analysis chamber and said PCR reaction chamber constructed of glass are bonded to said cutter constructed of silicon member and with said another member having a plurality of microchannels therein, at least one of said microchannels interconnecting said specimen chamber with said PCR reaction chamber section.~~

Claim 6. (Cancelled)

Claim 7. (Cancelled)

Claim 8. (Cancelled)

Claim 9. (Cancelled)

Claim 10. (Cancelled)

Claim 11. (Cancelled)

Claim 12. (Cancelled)

Claim 13. (Cancelled)

Claim 14. (Cancelled)

Claim 15. (Cancelled)

Claim 16. (Currently Amended) A microfabricated biopsy and genetic analysis instrument for biopsy and analysis of tissue with minimal handling of the tissue, consisting of:

a the biopsy region having ~~region having~~ provided by

a cutter ~~section~~ having a tapered opening with a sharp edge for cutting the tissue,

a specimen chamber connected directly to said biopsy region and located below said cutter ~~section~~, said specimen chamber positioned to directly receive the tissue cut by said cutter, and

a specimen treatment ~~section~~ and analysis chamber located adjacent and directly abutting said specimen chamber and connected directly to said specimen chamber, said specimen treatment and analysis chamber having a chemical solution channel, an optical window, and an optical detection system, and

~~a genetic region having~~

a PCR reaction chamber ~~section~~ directly abutting and connected directly to said specimen treatment ~~section~~ and analysis chamber, said PCR reaction chamber ~~section being integral with said specimen treatment section or abutting said specimen treatment section and~~ is constructed to receive ~~a fluid or sample~~ the tissue from said specimen treatment ~~section~~ and analysis chamber.

Claim 17. (Currently Amended) The ~~improvement~~ microfabricated biopsy and genetic analysis instrument for biopsy and analysis of tissue with minimal handling of the tissue of Claim 16, wherein said PCR reaction chamber ~~section~~, said specimen treatment ~~section~~ and analysis chamber, and said cutter ~~section~~ are ~~located on~~ part of a single substrate.

Claim 18. (Currently Amended) The ~~improvement~~ microfabricated biopsy and genetic analysis instrument for biopsy and analysis of tissue with minimal handling of the tissue of Claim 16, wherein said sharp edge of said cutter section has a smooth cutting edge with atomic sharpness capable of cutting very thin specimens of the tissue and ~~said specimen treatment section~~ have a width less than a width of wherein said PCR reaction chamber ~~section~~ includes a heater.

Claim 19. (Currently Amended) The ~~improvement~~ microfabricated biopsy and genetic analysis instrument for biopsy and analysis of tissue with minimal

handling of the tissue of Claim 16, ~~additionally including an~~ wherein said optical  
detection system is located adjacent to provide optical analysis of the tissue  
through said optical window of said specimen treatment section and analysis  
chamber.